**Architecting on AWS**

**Resources Links**

## Resources

The following resource links will provide more information and help reinforce topics covered during the course “Architecting on AWS”:

## Module 1: Introduction

* [AWS Well-Architected](https://aws.amazon.com/architecture/well-architected/)
* [Labs and Quests](https://wellarchitectedlabs.com/)
* [AWS Global Cloud Infrastructure (Interactive)](https://infrastructure.aws/)
* [Global Infrastructure](https://aws.amazon.com/about-aws/global-infrastructure/)
* [How AWS Came to Be](https://techcrunch.com/2016/07/02/andy-jassys-brief-history-of-the-genesis-of-aws/)
* [Learn how we secure AWS data centers by design](https://aws.amazon.com/compliance/data-center/)

## Module 2: The Simplest Architectures

* [Amazon S3 Storage Classes](https://aws.amazon.com/s3/storage-classes/)
* [S3 Bucket URLs and the Different Formats](http://docs.aws.amazon.com/AmazonS3/latest/dev/UsingBucket.html#access-bucket-intro)
* [Amazon S3 Transfer Acceleration](https://s3-accelerate-speedtest.s3-accelerate.amazonaws.com/en/accelerate-speed-comparsion.html)
* [AWS Policy Generator](https://awspolicygen.s3.amazonaws.com/policygen.html)
* [AWS Policy Simulator](https://policysim.aws.amazon.com/)
* [Amazon S3 pricing](https://aws.amazon.com/s3/pricing/)
* [Region Table](https://aws.amazon.com/about-aws/global-infrastructure/regional-product-services/)
* [How do I add an S3 Bucket policy?](https://docs.aws.amazon.com/AmazonS3/latest/user-guide/add-bucket-policy.html)
* [Restrictions and Limitations](https://docs.aws.amazon.com/AmazonS3/latest/dev/BucketRestrictions.html)
* [Bucket Access](https://docs.aws.amazon.com/AmazonS3/latest/dev/UsingBucket.html#access-bucket-intro)
* [Hosting a static website on Amazon S3](https://docs.aws.amazon.com/AmazonS3/latest/dev/WebsiteHosting.html)
* [Multipart Upload Overview](https://docs.aws.amazon.com/AmazonS3/latest/dev/mpuoverview.html)
* [Multipart Upload Limits](https://docs.aws.amazon.com/AmazonS3/latest/dev/qfacts.html)
* [Amazon S3 Glacier Access Control with Vault Lock Policies](https://docs.aws.amazon.com/amazonglacier/latest/dev/vault-lock-policy.html)
* [Using Amazon S3 block public access](https://docs.aws.amazon.com/AmazonS3/latest/dev/access-control-block-public-access.html)
* [Object lifecycle management](https://docs.aws.amazon.com/AmazonS3/latest/dev/object-lifecycle-mgmt.html)
* [How do I block public access to S3 buckets?](https://docs.aws.amazon.com/AmazonS3/latest/user-guide/block-public-access.html)
* [Locking objects using S3 Object Lock](https://docs.aws.amazon.com/AmazonS3/latest/dev/object-lock.html)
* [Cross-origin resource sharing (CORS)](https://docs.aws.amazon.com/AmazonS3/latest/dev/cors.html)
* [AWS Snowball](https://aws.amazon.com/snowball/)
* [AWS Snowmobile](https://aws.amazon.com/snowmobile/)

## Module 3: Adding a Compute Layer

* [Amazon EC2 Instance Types](https://aws.amazon.com/ec2/instance-types/)
* [EC2 Instance Comparison](https://www.ec2instances.info/)
* [Amazon EBS volume types](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ebs-volume-types.html)
* [Spot Instance Advisor](https://aws.amazon.com/ec2/spot/instance-advisor/)
* [Update to Spot Instances that allow Stop instead of Terminate](https://aws.amazon.com/blogs/aws/new-stop-resume-workloads-on-ec2-spot-instances/)
* [Instance metadata and user data](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-metadata.html)
* [Tagging Best Practices](https://aws.amazon.com/answers/account-management/aws-tagging-strategies/)
* [Amazon Machine Image (AMI)](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AMIs.html)
* [Amazon Elastic Block Store (Amazon EBS)](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AmazonEBS.html)
* [Amazon EFSHow It Works](https://docs.aws.amazon.com/efs/latest/ug/how-it-works.html)
* [SSD Instance Store Volumes](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ssd-instance-store.html)
* [New – Stop & Resume Workloads on EC2 Spot Instances](https://aws.amazon.com/blogs/aws/new-stop-resume-workloads-on-ec2-spot-instances/)
* [Amazon EC2 Spot Lets you Pause and Resume Your Workloads](https://aws.amazon.com/about-aws/whats-new/2017/11/amazon-ec2-spot-lets-you-pause-and-resume-your-workloads/)
* [Compute Optimizer](https://aws.amazon.com/compute-optimizer/)

## Module 4: Adding A Database Layer

* [What Is AWS Database Migration Service?](https://docs.aws.amazon.com/dms/latest/userguide/Welcome.html)
* [What is Amazon Aurora?](https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/CHAP_AuroraOverview.html)
* [Amazon DynamoDB](https://aws.amazon.com/dynamodb/)
* [Tutorial on DynamoDB](https://aws.amazon.com/getting-%20started/tutorials/create-nosql-table/)
* [Global TablesMulti-Region Replication with DynamoDB](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/GlobalTables.html)
* [Global Tables](https://aws.amazon.com/dynamodb/global-tables/)
* [Global Tables - More](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/globaltables_HowItWorks.html)
* [What Is the AWS Schema Conversion Tool?](https://docs.aws.amazon.com/SchemaConversionTool/latest/userguide/CHAP_Welcome.html)
* [Getting Started with Amazon DynamoDB](https://aws.amazon.com/dynamodb/getting-started/)
* [Cache for DynamoDB](https://aws.amazon.com/dynamodb/dax/)
* [Best Practices for Designing and Architecting with DynamoDB](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/best-practices.html)
* [Amazon RDS for Oracle](https://aws.amazon.com/rds/oracle/)
* [Amazon DynamoDB Transactions](https://aws.amazon.com/blogs/aws/new-amazon-dynamodb-transactions/)
* [Snowball Edge](https://docs.aws.amazon.com/snowball/latest/developer-guide/whatisedge.html)

## Module 5: Networking In AWS Part 1

* [IP Addressing in your VPC](https://docs.aws.amazon.com/vpc/latest/userguide/vpc-ip-addressing.html)
* [VPC and subnet sizing for IPv6](https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Subnets.html#vpc-sizing-ipv6)
* [CIDR.xyz](https://cidr.xyz/)
* [Subnetting Secret Book – free on Amazon.com with Kindle-Unlimited](https://www.amazon.com/gp/product/B07KV7N8WS/ref=dbs_a_def_rwt_bibl_vppi_i5)
* [Another Day, Another Billion Packets](https://www.youtube.com/watch?v=3qln2u1Vr2E)
* [A Day in the Life of a Billion Packets – Revision 3](https://youtu.be/St3SE4LWhKo)
* [Networking and Content Delivery on AWS](https://aws.amazon.com/products/networking)
* [Using DNS with your VPC](https://docs.aws.amazon.com/vpc/latest/userguide/vpc-dns.html)
* [Building a Scalable and Secure Multi-VPC AWS Network Infrastructure](https://d1.awsstatic.com/whitepapers/building-a-scalable-and-secure-multi-vpc-aws-network-infrastructure.pdf)

## Module 6: Networking In AWS Part 2

* [AWS Global Transit Network](https://aws.amazon.com/solutions/aws-global-transit-network/)
* [What is AWS Site-to-Site VPN?](https://docs.aws.amazon.com/vpn/latest/s2svpn/VPC_VPN.html)
* [AWS Site-to-site VPN – more info](http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_VPN.htm)
* [AWS Direct Connect features](https://aws.amazon.com/directconnect/features/)
* [AWS Direct Connect Resiliency Recommendations](https://aws.amazon.com/directconnect/resiliency-recommendation/)
* [AWS Direct Connect does **not** encrypt traffic during transit](https://docs.aws.amazon.com/directconnect/latest/UserGuide/encryption-in-transit.html)
* [Assigning my own IP address space to instances created in a VPC](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/elastic-ip-addresses-eip.html)
* [Internet Gateway](https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Internet_Gateway.html)
* [AWS Transit Gateway](https://docs.aws.amazon.com/vpc/latest/tgw/tgw-transit-gateways.html)
* [OSI model](https://en.wikipedia.org/wiki/OSI_model)
* [Elastic Load Balancing features](https://aws.amazon.com/elasticloadbalancing/features/)
* [Deregistration Delay](https://docs.aws.amazon.com/elasticloadbalancing/latest/application/load-balancer-target-groups.html#deregistration-delay)
* [Application Load Balancers now Support Advanced Request Routing](https://aws.amazon.com/about-aws/whats-new/2019/03/application-load-balancers-now-support-advanced-request-routing/)
* [Amazon Route53](https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/Welcome.html)
* [Amazon Route53 Health Checking](https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/dns-failover-determining-health-%20of-endpoints)
* [AWS Global Accelerator FAQs](https://aws.amazon.com/global-accelerator/features)

## Module 7: AWS Identity and Access Management (IAM)

* [AWS Identity & Access Management](https://docs.aws.amazon.com/IAM/latest/UserGuide/introduction.html)
* [AWS Account Root User](https://docs.aws.amazon.com/IAM/latest/UserGuide/id_root-user.html)
* [Identity Providers and Federation](https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_providers.html)
* [AWS Security Token Service](https://docs.aws.amazon.com/STS/latest/APIReference/Welcome.html)
* [Logging IAM and AWS STS API Calls with AWS CloudTrail](https://docs.aws.amazon.com/IAM/latest/UserGuide/cloudtrail-integration.html)
* [AWS Federated Authentication with Active Directory Federation Services (AD FS)](https://aws.amazon.com/blogs/security/aws-federated-authentication-with-active-directory-federation-services-ad-fs/)
* [AWS Service Catalog](https://aws.amazon.com/servicecatalog/?aws-service-catalog.sort-by=item.additionalFields.createdDate&aws-service-catalog.sort-order=desc)
* [AWS Landing Zone](https://aws.amazon.com/solutions/aws-landing-zone/)
* [Service control policies in AWS Organizations enable fine-grained permission controls](https://aws.amazon.com/about-aws/whats-new/2019/03/service-control-policies-enable-fine-grained-permission-controls/)
* [How to Rotate Access Keys for IAM Users](https://aws.amazon.com/blogs/security/how-to-rotate-access-keys-for-iam-users/)
* [Become an AWS IAM Policy Ninja in 60 Minutes or Less](https://www.youtube.com/watch?v=y7-fAT3z8Lo&feature=youtu.be)
* [Policies and Permissions](https://docs.aws.amazon.com/IAM/latest/UserGuide/access_policies.html)
* [IAM DeepDive Video re:Invent 2016 – Be an IAM Policy Ninja in 60 minutes or less](https://youtu.be/y7-fAT3z8Lo)
* [Root User Guide](https://docs.aws.amazon.com/IAM/latest/UserGuide/id_root-user.html)
* [Federation with ADFS and SAML](https://aws.amazon.com/blogs/security/enabling-federation-to-aws-using-windows-active-%20directory-adfs-and-saml-2-0/)
* [Federated Authentication with Active Directory - Blog](https://aws.amazon.com/blogs/security/aws-federated-authentication-with-active-directory-%20federation-services-ad-fs/)
* [Cognito User Guide](https://docs.aws.amazon.com/cognito/latest/developerguide/getting-started-with-cognito-user-%20pools.html)
* [AWS Landing Zone](https://aws.amazon.com/solutions/aws-landing-zone/)
* [Service Control Policies and AWS Organizations](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scp.html)
* [Which AWS Services Work with IAM?](https://docs.aws.amazon.com/IAM/latest/UserGuide/reference_aws-services-that-work-with-iam.html)

## Module 8: Elasticity, High Availability, and Monitoring

* [What Is Amazon CloudWatch?](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/WhatIsCloudWatch.html)
* [What Is Amazon CloudWatch Logs?](https://docs.aws.amazon.com/AmazonCloudWatch/latest/logs/WhatIsCloudWatchLogs.html)
* [Amazon CloudWatch Logs Insights – Fast, Interactive Log Analytics](https://aws.amazon.com/blogs/aws/new-amazon-cloudwatch-logs-insights-fast-interactive-log-analytics/)
* [How Amazon CloudWatch Works](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/cloudwatch_architecture.html)
* [CloudWatch Metrics](http://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/CW_Support_For_AWS.html)
* [CloudWatch Metrics - More](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/metrics-collected-by-CloudWatch-agent.html)
* [Auto Scaling Creates CloudWatch Metrics](https://docs.aws.amazon.com/autoscaling/ec2/userguide/cloud-watch-events.html)
* [AWS CloudTrail](https://aws.amazon.com/cloudtrail/)
* [CloudTrail Supported Services and Integrations](https://docs.aws.amazon.com/awscloudtrail/latest/userguide/cloudtrail-aws-service-specific-topics.html)
* [CloudTrail Supported Services and Integrations](https://docs.aws.amazon.com/awscloudtrail/latest/userguide/cloudtrail-aws-service-specific-topics.html)
* [Scaling Your Amazon RDS Instance Vertically and Horizontally](https://aws.amazon.com/blogs/database/scaling-your-amazon-rds-instance-vertically-and-horizontally/)
* [CDP:Sharding Write Pattern](http://en.clouddesignpattern.org/index.php/CDP:Sharding_Write_Pattern)
* [Amazon DynamoDB On-Demand – No Capacity Planning and Pay-Per-Request Pricing](https://aws.amazon.com/blogs/aws/amazon-dynamodb-on-demand-no-capacity-planning-and-pay-per-request-pricing/)
* [Best Practices for Designing and Using Partition Keys Effectively](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/bp-partition-key-design.html)
* [Designing Partition Keys to Distribute Your Workload Evenly](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/bp-partition-key-uniform-load.html)
* [AWS Auto Scaling](https://docs.aws.amazon.com/autoscaling/plans/userguide/what-is-aws-auto-scaling.html)
* [What Happens When Auto Scaling Policies Conflict?](http://docs.aws.amazon.com/autoscaling/latest/userguide/as-scaling-simple-step.html)
* [Auto Scaling Termination Policy](http://docs.aws.amazon.com/autoscaling/latest/userguide/as-instance-termination.html)
* [Step and Simple Scaling Policies for Amazon EC2 Auto Scaling](https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-scaling-simple-step.html)
* [Controlling Which Auto Scaling Instances Terminate During Scale In](https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-instance-termination.html)
* [AWS Services That Publish CloudWatch Metrics](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/aws-services-cloudwatch-metrics.html)
* [Auto Scaling for Amazon DynamoDB](https://aws.amazon.com/blogs/aws/new-auto-scaling-for-amazon-dynamodb/)
* [Setting up a Billing Alarm for Your Account](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/monitor_estimated_charg%20es_with_cloudwatch.html)

## Module 9: Automation

* [AWS CloudFormation](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/Welcome.html)
* [CloudFormation Sample Templates](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/cfn-sample-templates.html)
* [Detect Drift on an Entire CloudFormation Stack](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/detect-drift-stack.html)
* [CloudFormation Limits](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/cloudformation-limits.html)
* [Updating Stacks Using Change Sets](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/using-cfn-updating-stacks-changesets.html)
* [AWS Quick Starts](https://aws.amazon.com/quickstart/?quickstart-all.sort-by=item.additionalFields.updateDate&quickstart-all.sort-order=desc)
* [AWS System Manager](https://docs.aws.amazon.com/systems-manager/latest/userguide/what-is-systems-manager.html)
* [AWS Systems Manager Patch Manage](https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-patch.html)
* [AWS Systems Manager Maintenance Windows](https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-maintenance.html)
* [AWS Systems Manager State Manager](https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-state.html)
* [AWS Systems Manager Session Manager](https://docs.aws.amazon.com/systems-manager/latest/userguide/session-manager.html)
* [AWS Systems Manager Inventory](https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-inventory.html)
* [Walkthrough: Refer to resource outputs in another AWS CloudFormation stack](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/walkthrough-crossstackref.html)
* [AWS OpsWorks](https://docs.aws.amazon.com/opsworks/latest/userguide/welcome.html)
* [AWS Elastic Beanstalk](https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/Welcome.html)

## Module 10: Caching

* [Caching Overview](https://aws.amazon.com/caching/)
* [Request and Response Behavior for Amazon S3 Origins](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/RequestAndResponseBehaviorS3Origin.html)
* [What are AWS WAF, AWS shield, and AWS Firewall Manager?](https://docs.aws.amazon.com/waf/latest/developerguide/what-is-aws-waf.html)
* [AWS Shield](https://aws.amazon.com/shield)
* [Amazon DynamoDB Accelerator (DAX)A Read-Through/Write-Through Cache for DynamoDB](https://aws.amazon.com/blogs/database/amazon-dynamodb-accelerator-dax-a-read-throughwrite-through-cache-for-dynamodb/)
* [DAX FAQs](https://aws.amazon.com/dynamodb/faqs/#dax)
* [What Is Amazon CloudFront?](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/Introduction.html)
* [Amazon S3 + Amazon CloudFrontA Match Made in the Cloud](https://aws.amazon.com/blogs/networking-and-content-delivery/amazon-s3-amazon-cloudfront-a-match-made-in-the-cloud/)
* [Amazon Elasticache](https://docs.aws.amazon.com/elasticache/index.html)

## Module 11 Building Decoupled Architectures

* [Building Loosely Coupled, Scalable, C# Applications with Amazon SQS and Amazon SNS](https://aws.amazon.com/blogs/compute/building-loosely-coupled-scalable-c-applications-with-amazon-sqs-and-amazon-sns/)
* [Encrypting messages published to Amazon SNS with AWS KMS](https://aws.amazon.com/blogs/compute/encrypting-messages-published-to-amazon-sns-with-aws-kms/)
* [Can SNS Trigger Lambda Functions?](https://docs.aws.amazon.com/lambda/latest/dg/with-sns-example.html)
* [Video: API Gateway (5/29/2018)](https://www.youtube.com/watch?v=xkDcBssNd1g)

## Module 12: Microservices and Serverless Architectures

* [Microservices](https://aws.amazon.com/microservices/)
* [AWS Cloud Map](https://aws.amazon.com/cloud-map/)
* [Introducing AWS Cloud Map and AWS App Mesh](https://www.youtube.com/watch?v=qTE1PbdY3hY)
* [AWS App Mesh Features](https://aws.amazon.com/app-mesh/features/)
* [AWS Fargate](https://aws.amazon.com/fargate/)
* [Using AWS Lambda with CloudFront Lambda@Edge](https://docs.aws.amazon.com/lambda/latest/dg/lambda-edge.html)
* [Lambda Functions as Targets](https://docs.aws.amazon.com/elasticloadbalancing/latest/application/lambda-functions.html)
* [AWS Lambda Examples](https://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/lambda-examples.html)
* [Is Lambda Fast Enough to Respond to Real-Time Events?](https://aws.amazon.com/getting-started/projects/build-serverless-real-time-data-processing-app-lambda-kinesis-s3-dynamodb-cognito-athena/)
* [AWS Lambda Getting Started](https://aws.amazon.com/lambda/getting-started/)
* [AWS Lambda - Customer Case Studies](https://aws.amazon.com/lambda/resources/customer-case-studies/)
* [AWS Lambda – Other Use Cases](https://docs.aws.amazon.com/lambda/latest/dg/use-cases.html)
* [Best Practices for Working with AWS Lambda Functions](https://docs.aws.amazon.com/lambda/latest/dg/best-practices.html)
* [Building API-Driven Microservices with Amazon API Gateway - AWS Online Tech Talks](https://www.youtube.com/watch?v=xkDcBssNd1g)
* [Using AWS Lambda with Other Services](https://docs.aws.amazon.com/lambda/latest/dg/lambda-services.html)
* [What are AWS WAF, AWS shield, and AWS Firewall Manager?](https://docs.aws.amazon.com/waf/latest/developerguide/what-is-aws-waf.html)
* [Monitoring AWS WAF, AWS Firewall Manager, and AWS Shield Advanced](https://docs.aws.amazon.com/waf/latest/developerguide/monitoring_overview.html)

## Module 13: RTO\_RPO and Backup Recovery Setup

* [AWS DataSync](https://aws.amazon.com/datasync/?whats-new-cards.sort-by=item.additionalFields.postDateTime&whats-new-cards.sort-order=desc)
* [AWS Direct Connect Resiliency Recommendations](https://aws.amazon.com/directconnect/resiliency-recommendation/)
* [What Is AWS Storage Gateway?](https://docs.aws.amazon.com/storagegateway/latest/userguide/WhatIsStorageGateway.html)
* [AWS Storage Gateway (File, Volume, Tape)](https://docs.aws.amazon.com/storagegateway/latest/userguide/create-gateways.html)
* [Large Scale Disaster Recovery Using AWS regions](https://aws.amazon.com/blogs/startups/large-scale-disaster-recovery-using-aws-regions/)
* [Disaster Recovery Options with AWS - AWS Online Tech Talks](https://www.youtube.com/watch?v=2Bkt7MssTlE)
* [RTO/RPO White Paper](https://aws.amazon.com/blogs/aws/new-whitepaper-use-aws-for-disaster-recovery/)
* [Large-Scale Recovery](https://aws.amazon.com/blogs/startups/large-scale-disaster-recovery-using-aws-regions/)
* [Video: DR Options (11/25/2017)](https://www.youtube.com/watch?v=2Bkt7MssTlE)

## Module 14: Optimization

* [Continuous Optimization](https://aws.amazon.com/blogs/enterprise-strategy/continuous-optimization/)

**Additional Resources, Tools, and Links**

* [Compute Abstractions on AWS: A Visual Story](https://aws.amazon.com/blogs/architecture/compute-abstractions-on-aws-a-visual-story/)
* [AWS Well-Architected - Learn, measure, and build using architectural best practices](https://aws.amazon.com/architecture/well-architected/)
* [AWS Well-Architected Framework](https://wa.aws.amazon.com/index.html)
* [Updates to the Well-Architected Framework (July 2020)](https://aws.amazon.com/blogs/security/updates-to-security-pillar-aws-well-architected-framework/)
* [AWS Well-Architected Tool – Review Workloads Against Best Practices](https://aws.amazon.com/blogs/aws/new-aws-well-architected-tool-review-workloads-against-best-practices/)
* [AWS Well-Architected Tool – DEMO](https://d3nn3d4w2aqyem.cloudfront.net/mp4/Getting_started_video.mp4)
* [Amazon EC2 Instance Types](https://aws.amazon.com/ec2/instance-types/)
* [Spot Instance Advisor](https://aws.amazon.com/ec2/spot/instance-advisor/)
* [Amazon EC2 Auto Scaling Lifecycle Hooks](https://docs.aws.amazon.com/autoscaling/ec2/userguide/lifecycle-hooks.html)
* [Running high-scale web applications on Amazon EC2 Spot Instances](https://aws.amazon.com/blogs/compute/running-high-scale-web-on-spot-instances/)
* [Amazon EBS Volume Types](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html)
* [Recovering files from an Amazon EBS volume backup](https://aws.amazon.com/blogs/compute/recovering-files-from-an-amazon-ebs-volume-backup/)
* [Amazon Aurora Backtrack – Turn Back Time](https://aws.amazon.com/blogs/aws/amazon-aurora-backtrack-turn-back-time/)
* [Best Practices for DynamoDB](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/best-practices.html)
* [Best Practices for Designing and Using Partition Keys Effectively](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/bp-partition-key-design.html)
* [Building resiliency at scale at Tinder with Amazon ElastiCache](https://aws.amazon.com/blogs/database/building-resiliency-at-scale-at-tinder-with-amazon-elasticache/)
* [Introducing Amazon Elasticsearch Service as a target in AWS Database Migration Service](https://aws.amazon.com/blogs/database/introducing-amazon-elasticsearch-service-as-a-target-in-aws-database-migration-service/)
* [Migration Complete – Amazon’s Consumer Business Just Turned off its Final Oracle Database](https://aws.amazon.com/blogs/aws/migration-complete-amazons-consumer-business-just-turned-off-its-final-oracle-database/)
* [Scaling Your Amazon RDS Instance Vertically and Horizontally](https://aws.amazon.com/blogs/database/scaling-your-amazon-rds-instance-vertically-and-horizontally/)
* [Right-size Amazon RDS instances at scale based on Oracle performance metrics](https://aws.amazon.com/blogs/database/right-sizing-amazon-rds-instances-at-scale-based-on-oracle-performance-metrics/)
* [Amazon S3 + Amazon CloudFront: A Match Made in the Cloud](https://aws.amazon.com/blogs/networking-and-content-delivery/amazon-s3-amazon-cloudfront-a-match-made-in-the-cloud/)
* [How to set up a CloudFront distribution for Amazon S3](https://aws.amazon.com/cloudfront/getting-started/S3/)
* [Overview of Managing Access on S3](https://docs.aws.amazon.com/AmazonS3/latest/dev/access-control-overview.html#so-which-one-should-i-use)
* [New – AWS Storage Gateway Hardware Appliance](https://aws.amazon.com/blogs/aws/new-aws-storage-gateway-hardware-appliance/)
* [Using static IP addresses for Application Load Balancers](https://aws.amazon.com/blogs/networking-and-content-delivery/using-static-ip-addresses-for-application-load-balancers/)
* [New – Application Load Balancer Simplifies Deployment with Weighted Target Groups](https://aws.amazon.com/blogs/aws/new-application-load-balancer-simplifies-deployment-with-weighted-target-groups/)
* [How to securely publish Internet applications at scale using Application Load Balancer and AWS PrivateLink](https://aws.amazon.com/blogs/networking-and-content-delivery/how-to-securely-publish-internet-applications-at-scale-using-application-load-balancer-and-aws-privatelink/)
* [Debugging tool for network connectivity from Amazon VPC](https://aws.amazon.com/blogs/networking-and-content-delivery/debugging-tool-for-network-connectivity-from-amazon-vpc/)
* [VPC sharing: A new approach to multiple accounts and VPC management](https://aws.amazon.com/blogs/networking-and-content-delivery/vpc-sharing-a-new-approach-to-multiple-accounts-and-vpc-management/)
* [Multiple Region Multi-VPC Connectivity](https://aws.amazon.com/answers/networking/aws-multiple-region-multi-vpc-connectivity/)
* [Working with Direct Connect Gateways](https://docs.aws.amazon.com/directconnect/latest/UserGuide/direct-connect-gateways.html)
* [AWS Direct Connect Partners](https://aws.amazon.com/directconnect/partners/)
* [How do I provision an AWS Direct Connect connection?](https://aws.amazon.com/premiumsupport/knowledge-center/provision-direct-connection/)
* [Building a Serverless Dynamic DNS System with AWS](https://aws.amazon.com/blogs/startups/building-a-serverless-dynamic-dns-system-with-aws/)
* [How do I create an IAM policy to control access to Amazon EC2 resources using tags?](https://aws.amazon.com/premiumsupport/knowledge-center/iam-ec2-resource-tags/)
* [Simplify granting access to your AWS resources by using tags on AWS IAM users and roles](https://aws.amazon.com/blogs/security/simplify-granting-access-to-your-aws-resources-by-using-tags-on-aws-iam-users-and-roles/)
* [Writing IAM Policies: Grant Access to User-Specific Folders in an Amazon S3 Bucket](https://aws.amazon.com/blogs/security/writing-iam-policies-grant-access-to-user-specific-folders-in-an-amazon-s3-bucket/)
* [Now Create and Manage AWS IAM Roles More Easily with the Updated IAM Console](https://aws.amazon.com/blogs/security/now-create-and-manage-aws-iam-roles-more-easily-with-the-updated-iam-console/)
* [Guidelines for protecting your AWS account while using programmatic access](https://aws.amazon.com/blogs/security/guidelines-for-protecting-your-aws-account-while-using-programmatic-access/)
* [Creating a Billing Alarm to Monitor Your Estimated AWS Charges](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/monitor_estimated_charges_with_cloudwatch.html)
* [How to better monitor your custom application metrics using Amazon CloudWatch Agent](https://aws.amazon.com/blogs/devops/new-how-to-better-monitor-your-custom-application-metrics-using-amazon-cloudwatch-agent/)
* [CloudWatch Search Expression Examples](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/search-expression-examples.html)
* [CloudWatch Logs Subscription Consumer + Elasticsearch + Kibana Dashboards](https://aws.amazon.com/blogs/aws/cloudwatch-logs-subscription-consumer-elasticsearch-kibana-dashboards/)
* [Running Scripts from GitHub and Amazon S3](https://docs.aws.amazon.com/systems-manager/latest/userguide/integration-remote-scripts.html)
* [Validating AWS CloudFormation Templates](https://aws.amazon.com/blogs/devops/validating-aws-cloudformation-templates/)
* [Amazon CloudFront Dynamic Content Delivery](https://aws.amazon.com/cloudfront/dynamic-content/)
* [Implementation Considerations - Learn Caching Design Patterns](https://aws.amazon.com/caching/implementation-considerations/)
* [Caching Content Based on Query String Parameters](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/QueryStringParameters.html)
* [AWS Serverless Application Model](https://aws.amazon.com/serverless/sam/)
* [Firecracker – Lightweight Virtualization for Serverless Computing](https://aws.amazon.com/blogs/aws/firecracker-lightweight-virtualization-for-serverless-computing/)
* [Chaos Monkey](https://netflix.github.io/chaosmonkey/)
* [Netflix’s Simian Army](https://medium.com/netflix-techblog/the-netflix-simian-army-16e57fbab116)
* [Netflix’s Conformity Monkey (now OSS) for Watching Configurations](https://medium.com/netflix-techblog/conformity-monkey-keeping-your-cloud-instances-following-best-practices-2aaff3479adc)

**Architecture Reference & Tools**

* [AWS Quick Starts](https://aws.amazon.com/quickstart/)
* [AWS Solutions](https://aws.amazon.com/solutions/)
* [AWS Simple Monthly Calculator](https://calculator.s3.amazonaws.com/index.html)
* [AWS Pricing Calculator](https://calculator.aws/#/)
* [The Amazon Builders' Library](https://aws.amazon.com/builders-library/)
* [AWS Samples](https://github.com/aws-samples)
* [AWS CloudFormation Sample Templates](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/cfn-sample-templates.html)
* [AWS SAM - Serverless Application Repository](https://serverlessrepo.aws.amazon.com/applications)
* [AWS Geek Cloud Diagrams & Notes](https://www.awsgeek.com/)
* [TOOLS] [CloudPing](https://www.cloudping.info/)
* [TOOLS] [AWS Policy Generator](https://awspolicygen.s3.amazonaws.com/policygen.html)
* [TOOLS] [S3 Transfer Acceleration Speed Comparison Tool](http://s3-accelerate-speedtest.s3-accelerate.amazonaws.com/en/accelerate-speed-comparsion.html)
* [TOOLS] [AWS Global Accelerator - Speed Comparison](https://speedtest.globalaccelerator.aws/#/)
* [TOOLS] [Amazon WorkSpaces - Connection Health Check](https://clients.amazonworkspaces.com/Health.html)
* [TOOLS] [Web Identity Federation Playground](https://web-identity-federation-playground.s3.amazonaws.com/index.html)
* [TOOLS] [AWS Elastic Load Balancer Demos](https://exampleloadbalancer.com/)
* [TOOLS] [Amazon S3 Find and Forget](https://github.com/awslabs/amazon-s3-find-and-forget)
* [TOOLS unofficial] [JMESPath](https://jmespath.org/)
* [TOOLS unofficial] [AWS IP Ranges](http://52.24.200.194/)
* [TOOLS unofficial] [Cloudcraft - Create smart AWS diagrams](https://cloudcraft.co/)
* [TOOLS unofficial] [Bees with Machine Guns!](https://github.com/newsapps/beeswithmachineguns)
* [TOOLS unofficial] [The Grinder](http://grinder.sourceforge.net/)
* [TOOLS unofficial] [Apache JMeter](https://jmeter.apache.org/)
* [TOOLS unofficial] [CloudFormation Lint: CFN Nag](https://github.com/stelligent/cfn_nag)
* [TOOLS unofficial] [CloudFormation Lint: CFripper](https://github.com/Skyscanner/cfripper/)
* [TOOLS unofficial] [Awesome Honeypots](https://github.com/paralax/awesome-honeypots)
* [TOOLS unofficial] [Modern Honey Network](https://github.com/threatstream/mhn)
* [TOOLS unofficial] [Rhino Security Labs - Pacu](https://github.com/RhinoSecurityLabs/pacu)
* [TOOLS unofficial] [Rhino Security Labs - CloudGoat](https://github.com/RhinoSecurityLabs/cloudgoat)
* [TOOLS unofficial] [Rhino Security Labs - Cloud Container Attack](https://github.com/RhinoSecurityLabs/ccat)
* [TOOLS unofficial] [Console Recorder for AWS](https://github.com/iann0036/AWSConsoleRecorder)
* [TOOLS unofficial] [AWS CloudFront CDN Edge Locations](https://www.feitsui.com/en/blog/page/3)
* [TOOLS unofficial] [Lambda Load Testing](https://github.com/krapes/lambdaLoadTesting)
* [TOOLS unofficial] [MySQL Samples](https://dev.mysql.com/doc/index-other.html)
* [TOOLS unofficial] [Third-Party Tool to Create Visualizations of Security Groups](https://github.com/anaynayak/aws-security-viz)

**Workshops & Labs**

* [LABS] [AWS Qwiklabs](https://amazon.qwiklabs.com)
* [LABS] [AWS Well-Architected Labs](https://wellarchitectedlabs.com)
* [LABS] [VMware Cloud on AWS](https://www.vmware.com/try-vmware/vmc-aws-hol-labs.html)
* [LABS] [Self-paced Labs](https://aws.amazon.com/training/self-paced-labs/)
* [Workshop] [AWS Cloud Champion](https://aws.amazon.com/blogs/publicsector/announcing-aws-cloud-champion-gamified-tutorial-working-teaching-engaging-remotely/)
* [Workshop] [AWSome AWS Workshops](https://awesome-aws-workshops.com/)
* [Workshop] [Networking Workshop - Transit Gateway and Traffic Mirroring](https://www.networking-workshop.com/#/)
* [Workshop] [Amazon EC2 Spot Instances Workshop](https://ec2spotworkshops.com/)
* [Workshop] [Amazon CloudWatch](https://ako.aws-management.tools/tko372759/en/cw.html)
* [Workshop] [SSM & Config](https://ako.aws-management.tools/tko372759/en/ssm.html)
* [Workshop] [Amazon FSx Workshop](https://github.com/aws-samples/amazon-fsx-workshop)
* [Workshop] [Amazon ECS Workshop for AWS Fargate](https://ecsworkshop.com/)
* [Workshop] [Amazon EKS Workshop](https://eksworkshop.com/)
* [Workshop] [Amazon Lightsail Workshop](https://lightsailworkshop.com/)
* [Workshop] [Amazon DynamoDB Labs](https://amazon-dynamodb-labs.com/index.html)
* [Workshop] [Amazon Aurora Labs for MySQL](https://awsauroralabsmy.com/prereqs/environment/)
* [Workshop] [CloudEndure Deep Dive - Workshop](http://02h.s3-website.eu-central-1.amazonaws.com/)
* [Workshop] [Migration and Modernization Workshop Guide](https://application-migration-with-aws.workshop.aws/)
* [Workshop] [Kinesis Streaming Analytics Workshop](https://streaming-analytics.labgui.de/)
* [Workshop] [Workshop: Choose Your Own SAML Adventure](http://federationworkshopreinvent2016.s3-website-us-east-1.amazonaws.com/)
* [Workshop] [Landing Zone Workshop](https://lz-workshop.com/)
* [Workshop] [Security Workshops - Permission Boundaries: How to Truly Delegate Permissions on AWS](https://awssecworkshops.com/builder-sessions/permission-boundary/build/)
* [Workshop] [Security Workshops - Data Protection, Detection, Identity, Threat Detection](https://awssecworkshops.com/workshops/)
* [Workshop] [AWS Protecting Workloads Workshops](http://protecting-workloads.awssecworkshops.com/)
* [Workshop] [Getting Hands on with Amazon GuardDuty](https://hands-on-guardduty.awssecworkshops.com/)
* [Workshop] [Integrating security into your container pipeline](https://container-devsecops.awssecworkshops.com/)
* [Workshop] [DevSecOps with Snyk](https://snyk.modernize.awsworkshop.io/)
* [Workshop] [Microsoft Workloads Immersion Day](http://msft-on-aws.corp.amazon.com/)
* [Workshop] [Learn Python On AWS Workshop](https://learn-to-code.workshop.aws/)
* [Workshop unofficial] [Welcome to the flAWS challenge](http://flaws.cloud/)
* [Workshop unofficial] [Welcome to the flAWS 2 challenge](http://flaws2.cloud/)
* [Workshop unofficial] [Play with Docker](https://labs.play-with-docker.com/)
* [Workshop unofficial] [Hello Kubernetes w/ Minikube](https://kubernetes.io/docs/tutorials/hello-minikube/)
* [SLIDES] [Technical Essentials on AWS](https://www.slideshare.net/AmazonWebServices/technical-essentials-training-aws-innovate-ottawa)
* [EBOOK] [Hands-On AWS Penetration Testing with Kali Linux](https://github.com/PacktPublishing/Hands-On-AWS-Penetration-Testing-with-Kali-Linux)
* [FILES] [Security Engineering on AWS - script lab 2](https://danidoo.github.io/lab2.html)
* [FILES] [Developing on AWS - Additional Resources](https://hackmd.io/@MwIcLI3tRLiY6ECW-aHV_A/Syn63uSsm)
* [FILES] [Developing on AWS - Solutions for Labs](https://aws-tc-largeobjects.s3.amazonaws.com/AWS-100-DEV/v3.0/fullCodeForAllLabs.html)
* [FILES] [AWSome Days - Additional Resources](http://bit.ly/AWSomeResources)
* [VIDEO-LABS] [How to use QwikLabs](http://bit.ly/labintro)
* [VIDEO-LABS] [AWS Technical Essentials](http://bit.ly/tesslabs)
* [VIDEO-LABS] [AWS Cloud Practitioner Essentials](http://bit.ly/cpelabs)
* [VIDEO-LABS] [Architecting on AWS](http://bit.ly/arclabs)
* [VIDEO-LABS] [Systems Operations on AWS](http://bit.ly/opslabs)
* [VIDEO-LABS] [Developing on AWS](http://bit.ly/Devlabs)
* [VIDEO-LABS] [Security Engineering on AWS](http://bit.ly/seceng-labs)
* [VIDEO-LABS] [Planning and Designing Database on AWS](http://bit.ly/PD_DBLAB)
* [VIDEO-LABS] [Deep Learning on AWS](http://bit.ly/deeplabs)
* [VIDEO-LABS] [Moving to AWS Serverless](http://bit.ly/TC-MTAS)
* [VIDEO-LABS] [Advanced Architecting on AWS](http://bit.ly/aarclabs)
* [VIDEO-LABS] [IoT in Scale: IoT Solution using AWS Services](http://bit.ly/iotscale)

**GENERAL LINKS**

* [AWS News Blog](https://aws.amazon.com/blogs/aws/)
* [AWS YouTube channel](https://www.youtube.com/user/AmazonWebServices/)
* [Reinvent Videos](https://reinventvideos.com/)
* [AWS Service Health Dashboard](https://status.aws.amazon.com/)
* [A digital tour of an AWS data center](https://aws.amazon.com/compliance/data-center/)
* [AWS re:Invent 2016 | Amazon Global Network Overview with James Hamilton](https://www.youtube.com/watch?v=uj7Ting6Ckk)
* [Service Availability by Region](https://aws.amazon.com/about-aws/global-infrastructure/regional-product-services/)
* [Completing the Netflix Cloud Migration (Feb 2016)](https://media.netflix.com/en/company-blog/completing-the-netflix-cloud-migration)
* [Diagramming and Budgeting tool that is still early in development but shows great promise](https://cloudcraft.co)